THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

HOW WE MOVE MATTERS:

EXPLORING THE CONNECTIONS BETWEEN NEW TRANSPORTATION AND MOBILITY OPTIONS AND ENVIRONMENTAL HEALTH

A VIRTUAL WORKSHOP OF THE ENVIRONMENTAL HEALTH MATTERS INITIATIVE

Technology-enabled transportation services – like ridehailing, delivery apps, automated vehicles, and e-scooters – have revolutionized the way we move. But changing how we get around also impacts our environment. How does ridehailing affect air pollution in our communities? What are the environmental impacts of having packages delivered to our front door? This workshop hosted by the Environmental Health Matters Initiative (EHMI) will bring together experts in transportation, consumer behavior, and environmental health to share perspectives on the environmental health impact of evolving mobility options. Participants will explore existing and needed research on the environmental health challenges related to emerging transportation services expected in the next decade.

This event will take place on July 13, 16, and 21, 2021. Learn more on our webpage. Join Slack at https://bit.ly/HowWeMoveMatters_Slack.

TUESDAY, JULY 13, 2021

(current as of July 12, 2021)

11:30 **Welcome and Overview**
Marcia McNutt, The National Academies of Sciences, Engineering, and Medicine
Greg Symmes, The National Academies of Sciences, Engineering and Medicine
EHMI Co-Chair: Jonathan Samet, Colorado School of Public Health
EHMI Co-Chair: Martha Rudolph, Colorado Department of Public Health & Environment, Retired
Planning Committee Chair: Dan Greenbaum, Health Effects Institute

12:00 **Session I. The Mobility Revolution: How are Our Options Changing?**
Moderator: Rachael Nealer, U.S. Department of Energy
William Chernicoff, Toyota Mobility Foundation
Alison Conway, City College of New York
Jennifer Frost, Dallas Area Rapid Transit
Mike Roeth, North American Council for Freight Efficiency
Constantine Samaras, Carnegie Mellon University

Experts on the forefront of evaluating, developing and integrating mobility options in the transportation sector will explore how these options have changed the way we move people and goods recently (within the last 5 years) and how they are likely to change in the future (5-10 year time horizon). Specific focus

will be on new transportation technologies, the pace of their adoption, and their economic and environmental footprint.

1:30 **Break and Virtual Poster Presentations**
Sara Khoeini and Irfan Batur, Arizona State University
Jeffrey LaMondia, Auburn University
Mark Nieuwenhuijsen, ISGlobal

Listen in during the break to learn more about current and ongoing research exploring the connections between new transportation and mobility options and environmental health.

2:00 **Session II. The Big Picture: Why Does the Mobility Revolution Matter to Environmental Health?**
Moderator: Phil Winters, University of South Florida
Hanna Boogaard, Health Effects Institute
Michael Brauer, University of British Columbia
Shirra Freeman, University of Haifa
Shari Schaftlein, U.S. Department of Transportation
Jacob Ward, U.S. Department of Energy
Joe Zietsman, Texas A&M Transportation Institute

This session will examine the mobility changes discussed in session #1 in the context of environmental health – for every change in mode choice, what are the environmental health changes (both positive and negative)? Lessons learned from changes occurring in recent years will also be explored to help evaluate/consider impacts of further mobility changes on environmental health, including air quality, waste, and other areas of concern.

3:30 **Day One Wrap Up**

4:00 **Adjourn**

FRIDAY, JULY 16

(current as of July 12, 2021)

11:30 **Welcome and Day One Recap**
Planning Committee Chair: Dan Greenbaum, Health Effects Institute
Rachael Nealer, U.S. Department of Energy
Phil Winters, Center for Urban Transportation Research, University of South Florida

12:00 **Session III. Assessing Solutions: Policy's Impact on Our Mobility and Environmental Health**
Moderator: Bill Eisele, Texas A&M Transportation Institute
Marianne Hatzopoulou, University of Toronto
Rob Henry, 82 Alliance
Surili Patel, Metropolitan Group
Annalisa Schilla, California Air Resources Board
Shin-Pei Tsay, Uber Technologies Inc.

This session will highlight important insights at the nexus of where transportation policies, environmental health policies, and actual consumer behavior meet. Discussions will attempt to find the sweet spot

between policy, economic incentives, improved mobility, equity and environmental health. Example topics may include curbside management, streetscape changes, and zoning.

1:30 **Break and Virtual Poster Presentations**
Sara Khoeini and Irfan Batur, Arizona State University
Jeffrey LaMondia, Auburn University
Mark Nieuwenhuijsen, ISGlobal

Listen in during the break to learn more about current and ongoing research exploring the connections between new transportation and mobility options and environmental health.

2:00 **Session IV. The Wicked Problems: Real World Experiences and Opportunities to Shape the Path Ahead**
Moderator: Beth Karlin, See Change Institute
Gavin Huntley-Fenner, Huntley-Fenner Advisors, Inc.
Tim Papandreou, Emerging Transport Advisors
Reuven Sussman, American Council for an Energy-Efficient Economy

As governmental entities, consumers, businesses, and others respond to changes in how people and goods move, we are seeing both opportunities and challenges that are unprecedented. The session will feature a panel of experts from health, transportation, and behavioral science to reflect on what we've learned so far and share insights on the opportunities and challenges that lie ahead of us. We'll also be sharing (and commenting on) workshop attendees insights from Slack to bring everybody into the conversation.

3:30 **Day Two Wrap Up**

4:00 **Adjourn**

WEDNESDAY, JULY 21

(current as of July 12, 2021)

11:30 **Welcome and Recap**
Planning Committee Chair: Dan Greenbaum, Health Effects Institute
Rachael Nealer, U.S. Department of Energy
Phil Winters, Center for Urban Transportation Research, University of South Florida
Bill Eisele, Texas A&M Transportation Institute
Beth Karlin, See Change Institute

12:00 **Session V. Prioritizing the Path Ahead: What's Really Needed to Preserve the Environmental Health of our Communities?**
Moderator: Dan Greenbaum, Health Effects Institute
Robin Chase, Zipcar, Veniam, the New Urban Mobility Alliance
Gloria Jeff, Minnesota Department of Transportation
Lily Lowder, Alamo Area Metropolitan Planning Organization
Michael Replogle, New York City Department of Transportation, Retired
Joseph Sherlock, Duke University

Building upon the previous day's discussion, key thought leaders will be invited to identify and define key priorities in addressing environmental health issues stemming from changing mobility patterns. It will

also discuss the role we all have to play to mitigate negative and encourage positive environmental health outcomes.

1:30 **Break and Virtual Poster Presentations**
Sara Khoeini and Irfan Batur, Arizona State University
Jeffrey LaMondia, Auburn University
Mark Nieuwenhuijsen, ISGlobal

Listen in during the break to learn more about current and ongoing research exploring the connections between new transportation and mobility options and environmental health.

2:00 **Session VI. Bringing It All Together: Information and Research Needs for Enhanced Mobility and Environmental Health**
Moderator: Gary Minsavage, ExxonMobil
Bill Eisele, Texas A&M Transportation Institute
Dan Greenbaum, Health Effects Institute
Beth Karlin, See Change Institute
Rachael Nealer, U.S. Department of Energy
Phil Winters, University of South Florida

Using input and insights gathered throughout the event and reflecting on the prioritization discussions, we will identify needed next steps to address gaps in transportation and environmental health data, policies and plans, and ways all key stakeholders can affect future mobility changes that positively support environmental health.

3:30 **Concluding Remarks**
Planning Committee Chair: Dan Greenbaum, Health Effects Institute
EHMI Co-Chair: Jonathan Samet, Colorado School of Public Health
EHMI Co-Chair: Martha Rudolph, Colorado Department of Public Health & Environment, Retired
Neil Pedersen, Transportation Research Board

4:00 **Adjourn**

SPEAKER BIOS

Irfan Batur is a Ph.D. student in the School of Sustainable Engineering and the Built Environment at Arizona State University. He also works as a graduate research associate at TOMNET, a USDOT Tier 1 University Transportation Center. His research interests include travel behavior, activity-time use, emerging mobility services, and sustainable transportation. He holds a B.Eng. degree from TOBB University of Economics and Technology, Turkey, and an M.S. degree from Istanbul Sehir University, Turkey.

Dr. Hanna Boogaard has more than 15 years of experience in air pollution epidemiology. She is a Consultant Principal Scientist at the Health Effects Institute (HEI) in Boston, MA, an independent research organization with balanced funding from the U.S. Environmental Protection Agency and motor vehicle industry. She received a PhD in 2012 in Air Pollution Epidemiology from Utrecht University, Netherlands. She studied health effects of traffic-related air pollution, and the effectiveness of traffic policy measures. At HEI, she is involved in research oversight and review of studies investigating the health effects of air pollution and studies evaluating the effectiveness of interventions to improve air quality and public health. In addition, Dr. Boogaard is involved in developing and overseeing new research programs on non-tailpipe traffic emissions, studies assessing adverse health effects of long-term exposure to low levels of ambient air pollution, and studies on health effects of traffic-related air pollution. Furthermore, she is working very closely with an expert HEI panel to systematically evaluate the evidence for the associations of long-term exposure to traffic-related air pollution with selected health outcomes. She holds an MSc in Epidemiology and Environmental Health Sciences (2005) from Maastricht University, Netherlands. She has been advisor of the National Institute of Environmental Health Sciences, World Health Organization, Health Canada, and other national and international bodies. She is associate editor for the journal Environment International. She is co-chair of the International Society for Environmental Epidemiology (ISEE) Europe Chapter.

Dr. Michael Brauer is a Professor in the School of Population and Public Health at The University of British Columbia and a Principal Research Scientist and Affiliate Professor at the Institute for Health Metrics and Evaluation at the University of Washington, where he leads the Environmental Risk Factors team for the Global Burden of Disease. His research focuses on linkages between the built environment and human health, with specific interest in the global health impacts of air pollution, the relationships between multiple exposures mediated by urban form and population health, and health impacts of a changing climate. He has participated in monitoring and epidemiological studies throughout the world and served on numerous committees, including those advising the World Health Organization, the Climate and Clean Air Coalition, the World Heart Federation, the US National Academies, the Royal Society of Canada, the International Joint Commission and governments in North America and Asia. His contributions to environmental health have been acknowledged by a number of career achievement and publication awards. Dr. Brauer received a Ph.D. in Environmental Health from Harvard University.

Robin Chase is the co-founder and former CEO of Zipcar. Ms. Chase is also the co-founder of Veniam. Most recently, she co-founded NUMO, the New Urban Mobility alliance. Currently, Ms. Chase works with cities to maximize the transformation made possible by self-driving cars. Ms. Chase sits on the Board of the World Resources Institute and Tucows. She also serves on the Dutch multinational DSM's Sustainability Advisory Board. Previously, Ms. Chase also sat on: the board of Veniam; the board of the Massachusetts Department of Transportation; the board of the French National Digital Agency; the National Advisory Council for Innovation & Entrepreneurship for the U.S. Department of Commerce; the Intelligent Transportations Systems Program Advisory Committee for the U.S. Department of Transportation; the OECD's International Transport Forum Advisory Board; the Massachusetts Governor's Transportation Transition Working Group; and the Mayor of Boston's Wireless Task

Force. Additionally, Ms. Chase lectures widely, is frequently featured in the media, is a published author, and has received several awards for her work in the areas of urban planning, innovation, environment, and design, including: the Urban Land Institute JC Nichols Prize for Visionary in Urban Development; the Harvard College Women's Leadership Award; the Massachusetts Public Health Award; the Massachusetts Governor's Award for Entrepreneurial Spirit; the SBANE Innovator of the Year Award; and the Woman Entrepreneur of the Year Award. She was also recognized among Time's 100 Most Influential People in 2009, BusinessWeek's Top 10 Designers in 2007, and Fast Company's Fast 50 Innovators in 2001. Ms. Chase received her M.B.A from the MIT Sloan School of Management and won a Loeb Fellowship at the Harvard Graduate School of Design. She also received an honorary Ph.D. in Design from the Illinois Institute of Technology.

Dr. William Chernicoff currently serves as the Senior Manager of Global Research and Innovation for the Toyota Mobility Foundation. He defines and coordinates the Foundation's research agenda, initiatives, and programs and provides technology guidance to projects. With both near- and long-term perspectives, Dr. Chernicoff conceives, identifies, and executes new technology approaches that enable and improve the solutions implemented by the Foundation and its partners. He brings a strong background across energy, technology, mobility, and climate policy from his prior work as a Manager and Principal Researcher with Toyota North America's Energy & Environmental Research Group and his eight years with the US DOT's Research Administration. Dr. Chernicoff earned a Bachelor of Science in Materials Science and Engineering at M.I.T., a Master of Science in Manufacturing Engineering from Boston University, and a Ph.D. in Systems Engineering and Engineering Management at the George Washington University.

Dr. Alison Conway is the Herbert G. Kayser Associate Professor of Civil Engineering at the City College of New York, where she teaches undergraduate and graduate courses in transportation planning, transportation systems engineering, multi-modal urban transportation, and city logistics. She conducts research primarily in the area of urban goods movement, and is an associated researcher to MetroFreight, a Volvo Research and Education Foundations Center of Excellence in Urban Freight. She currently serves as Chair of the ASCE Transportation and Development Institute's (T&DI) Freight and Logistics Committee, as Chair of the Transportation Research Board's (TRB's) Freight Data Committee, and as a member of TRB's Urban Freight Committee.

Dr. Shirra Freeman has spent over 25 years applying scientific evidence to planning in municipalities and public health settings and works extensively in multi-stakeholder decision support systems and knowledge mobilization. While with the National Collaborating Centre for Environmental Health, Dr. Freeman conducted the first national survey on the practice of Health Impact Assessment (HIA) by Canadian public health professionals and leveraged the findings to create knowledge products to enhance the inclusion of health criteria in transportation initiatives, urban planning, and natural resource development. During the COVID-19 pandemic, her understanding of the interface between public health and transportation informed guidance on safe cycling, bike sharing and carpooling. For seven years Dr. Freeman coordinated sustainability programming for the City of Haifa, overseeing environmental education and participating in initiatives promoting active transportation and sustainable management of public spaces and natural assets. Dr. Freeman has additional expertise in coastal resource planning and is a research fellow with the University of Haifa's Recanati Institute of Maritime Studies. She has participated in numerous committees in organizations including the UN-Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), the IUCN, the FAO, Israel's National Ecosystem Services Assessment, and Israel's Ministry of Health. Dr. Freeman received her M.Sc. in Natural Resource and Environmental Economics from University College London and her Ph.D. in Geography and Environmental Studies from the University of Haifa.

Jennifer Frost is the Assistant Vice President – Operations Administration at Dallas Area Rapid Transit. She has 20 year of experience in the transit industry with a focus on service delivery, the customer experience, and workforce development. Her background includes several modes of service, including fixed route bus, light rail, and demand response transportation. Ms. Frost has been associated with the Transportation Research Board (TRB) since 2009 and is currently a member of the AP050 Bus Transit Systems Committee and the AP020 Innovative Public Transportation Services and Technologies Committee. She formerly served on TRB's Paratransit Committee and Automated Transit Systems Committee. She holds a Master's Degree in Public Administration from the University of North Texas.

Dr. Marianne Hatzopoulou is Professor in the Department of Civil and Mineral Engineering at the University of Toronto. Dr. Hatzopoulou leads an active research group studying the interactions between transportation, air quality, climate change, and public health. She supported municipal governments and community groups in the appraisal of transportation policies in terms of climate and air impacts. She also served on national and international expert panels, providing advice on the development of strategies to reduce transportation-related emissions. Dr. Hatzopoulou works closely with epidemiologists in the development of improved measures for air pollution exposure and has received funding from provincial, federal, and international health agencies to conduct integrative research in transportation engineering, air pollution, and public health. She serves on the Transportation Research Board of the National Academies of Sciences, Engineering, and Medicine as the committee research coordinator for the standing committee on "Air Quality and Greenhouse Gas Mitigation". She is also an associate editor of the journal Transportation Research Part D: Transport and Environment.

Rob Henry is the Founder, CEO & President of The 82 Alliance, which is a not for profit mobility think tank that focuses on reimagining how we move our cities, towns and people. Mr. Henry is also the CEO of Communities in Motion and the Executive Director of GVF. Mr. Henry is one of the first Transportation Demand Management Certified Professionals (TDM-CP) in the U.S. and has presented on TDM projects throughout the U.S. Currently, Mr. Henry serves as the Chair of the Public Policy Committee for the Association for Commuter Transportation (ACT), the premier TDM organization in the United States, and is the organization's Immediate Past President. He is also the co-founder of the King of Prussia Rail Coalition and a founding member of the Valley Forge Park Alliance. Mr. Henry is a member of the Board of Directors for the King of Prussia District and co-chairs the Board's transportation committee. A TDM expert specializing in transportation planning, nonprofit governance, advocacy, strategic planning, economic development, marketing and branding, Mr. Henry has received several awards for his work in the transportation sector, including the Main Line Chamber of Commerce Non-Profit CEO of the Year award and the ACT Excellence in Advocacy award. He was featured in the Philadelphia Inquirer's Leadership Agenda Series, which highlighted CEOs in the Greater Philadelphia region, and was named "Mr. Transit" in the Philadelphia Inquirer in 2013. Mr. Henry received his Bachelors of Science from DeSales University in 2007.

Dr. Gavin Huntley-Fenner is the principal human factors and safety consultant at Huntley-Fenner Advisors, which provides scientific advisory services regarding product hazard analyses of manufactured goods, risk perception, warnings & labeling, human reaction time, and decision-making. Specializing in rigorous and creative approaches to assessing risks and benefits, Huntley-Fenner brings 25 years of both academic and business experience to bear on the crafting of innovative and effective means of communicating to consumers, with the goal of affecting human behavior to optimize health and safety. His most recent transportation-safety research focused on auditory looming and the perception of approaching trains. Huntley-Fenner also serves as an expert legal consultant, public speaker, and facilitator of risk analysis groups, where he is noted for his ability to effectively articulate solutions to complex problems to a variety of audiences. He has served on the U.S. FDA Risk Communication Advisory Committee and as a member of the Planning Committee for the National Academies workshop on "Characterizing and Communicating Uncertainty in the Assessment of Benefits and Risks of Pharmaceutical Products." Huntley-Fenner

received his Ph.D. in Brain and Cognitive Sciences from Massachusetts Institute of Technology in 1995 and his B.A. in Cognitive Sciences from Vassar College in 1990.

Gloria Jeff currently serves as the Metro District Livability Director of the Minnesota Department of Transportation. Prior to her current position, Ms. Jeff has served as the Deputy Administrator for FHWA; the Associate Administrator for Policy with the Federal Highway Administration; Director of the Michigan Department of Transportation; Transportation Programs Manager for the Atlanta District of Parsons Brinkerhoff; and the leader of the Operations Division for the District of Columbia Department of Transportation. Additionally, Ms. Jeff has represented the U.S. government in international settings and has spoken about transportation issues at various venues. Ms. Jeff is also a member of the American Planning Association and the Institute of Certified Planners. Ms. Jeff holds a certificate in management from Harvard University, the AASHTO Executive Leadership Institute, and the Professional Program in Public Transit from Carnegie Mellon, as well as a certificate in public administration from Wichita State University. Ms. Jeff received both her Masters of Science in Civil engineering and in Urban Planning and her Bachelor of Science in Civil Engineering from the University of Michigan.

Dr. Sara Khoeini is an assistant research professor of transportation systems in the School of Sustainable Engineering and the Built Environment at Arizona State University. She is also the assistant director of a USDOT Tier 1 University Transportation Center (UTC) called TOMNET (Teaching Old Models New Tricks). She is studying users' attitudes, behaviors, and choices in response to transformative and disruptive changes in transportation, including automation, the sharing economy, and most recently, the pandemic. Her research goal is to take advantage of these rapidly evolving transformations in transportation to elevate quality of life for all, while advancing system-level sustainability, efficiency, and productivity. Most recently, Dr. Khoeini has been serving as the leader of the TOMNET Transformative Technologies in Transportation (T4) Survey project that involves coordinating a complex survey deployment effort across four universities. She received her PhD in Civil and Environmental Engineering in 2014 from the Georgia Institute of Technology with a focus in transportation systems.

Dr. Jeffrey LaMondia, is an associate professor in transportation engineering in the civil and environmental engineering department at Auburn University. Dr. LaMondia is an expert in travel demand modeling and travel behavior analysis, with a focus on inclusive planning methods, innovative data collection methods, long distance travel forecasting, and infrastructure LOS impacts on cyclist behaviors. His work utilizes unique travel survey methods, big data analyses, geographic information systems (GIS) and discrete choice modeling. His research has been funded through Federal Highway Administration, Centers for Disease Control, state Departments of Transportation, University Transportation Centers, and other agencies.

Lily Lowder is the Commute Solutions Planner at the Alamo Area Metropolitan Planning Organization in San Antonio, Texas. In support of the Alamo Commutes program, Ms. Lowder assists regional transportation demand management initiatives and consults with employers on smart commuting. Prior to her current position, Ms. Lowder served as the Natural Resources Outreach Specialist for the Alamo Area Council of Governments' Commute Solutions & Clean Cities program. In 2018, she was selected to participate in the Post-Carbon Cities of Tomorrow (POCACITO) program in Germany to study sustainable transportation. In 2020, she was honored with the 40 Under 40 Award by the Association for Commuter Transportation. Ms. Lowder received a Bachelor of Science Degree in Political Science from Texas State University in 2016. She serves on the Board of Directors for the San Antonio Chapter of WTS and on the City of San Antonio's Transportation Advisory Board.

Dr. Mark J. Nieuwenhuijsen is a Research Professor and Director of the Urban Planning, Environment and Health Initiative and the Air Pollution and Urban Environment research program at ISGlobal Barcelona, Spain. He is a leading world expert in environmental exposure assessments, epidemiology, and health impact assessments, with a

strong focus and interest on healthy urban living. He has edited three books on exposure assessments and environmental epidemiology; three books on urban and transport planning and health, including COVID-19; and one book on traffic-related air pollution. Dr. Nieuwenhuijsen has co-authored 35 book chapters and more than 500 papers published in peer reviewed journals. In 2018, he was awarded the ISEE John Goldsmith Award for Outstanding Contributions to Environmental Epidemiology. In 2018, 2019, and 2020 he was among the one percent most cited scientists in the world.

Timothy Papandreou has nearly two decades of global experience in moving people and things in both business and government. He has lead teams, launched and scaled almost every mode of transport service, and is considered a global expert and thought leader in the future of mobility and automation. He is the founder of Emerging Transport Advisors, providing strategic guidance to clients to prepare for the active, shared, electric, and automated disruptions to the transport system and broader society. As the former strategic partnerships manager at Google X and Waymo, he collaborated with cross-functional teams to prepare the commercialization and launch of the world's first fully self-driving ride hailing service, while being fully immersed in the technology. He also co-founded City Innovate, a smart city platform matching governments and startups to accelerate innovation. As the Chief Innovation Officer for San Francisco's transportation agency, he led cross-functional teams to deliver various programs such as the US Smart City Challenge; the Strategic Work Plan, meeting its 50% sustainable mode share goal 3 years early; large redevelopment and multimodal projects; launched the Mayor's Vision Zero transportation safety; and supported future initiatives around port and airports including the nation's first urban drone policy efforts. Timothy is always ahead of the curve. His unique private, public, and community experience allows him to see the signals and trends, join the dots and develop unique insights, drawing from his strong track record to lead teams, build win-win partnerships, and deliver innovation.

Surili Patel is a Vice President of Metropolitan Group, where she serves as a trusted voice in public health, promotes diversity, and works to advance health equity and environmental justice. With a profound public health and biomedical research background, Patel has led the climate and health discussion out of environmental circles and into the broader public health realm. Her areas of expertise include: developing strategy on intersectional issues, like climate change, health equity and Tribal public health; building partnerships among public agencies and communities; designing advocacy and national policy strategy; and crafting environmental health messaging. Additionally, Patel has deep issue-based knowledge in environmental health priorities including water safety and security, children's environmental health, Tribal public and environmental health, transportation and health, and healthy community design. Prior to her current work with Metropolitan Group, Patel held several key positions at the American Public Health Association, including Director of the Center of Climate, Health & Equity. She also served as the Senior Specialist on Environmental Health at the Association of Public Health Laboratories. Patel also serves the community through her membership on several boards and committees, including: the Physicians for Social Responsibility Board of Directors; the Advisory Board of the Yale Center on Climate Change and Health; the RESOLVE Board of Advisors; and the Green Leadership Trust. Patel received her Masters of Science in Biomedical Science Policy and Advocacy from Georgetown University in 2008.

Michael Replogle stepped down as Deputy Commissioner for Policy, New York City Department of Transportation last month after 6 years of service. While there, he developed strategy on a broad array of transportation issues to advance Mayor Bill de Blasio's OneNYC sustainability agenda. He developed the agency's *Strategic Plan 2016* and shaped Vision Zero efforts that cut pedestrian fatalities by one-third. He conceptualized the nimble framework for NYC's Open Restaurants program that saved 100,000 jobs in the restaurant industry and brought life to city streets during the COVID pandemic by enabling 10,000 restaurants to open on sidewalks and in parking spaces without delay. He played a key role advancing plate-based parking enforcement and administration, which will roll

out in the coming year, enabling transformative curb management and parking reforms. Mr. Replogle won the exponential expansion of the agency's freight program team and adoption of an off-hours delivery program, expansion of loading zones, double parking rule reform, an e-cargo bike program, and a *Smart Truck Plan for New York City*. He managed collaborative efforts with the Taxi and Limousine Commission to manage For-Hire-Vehicles. He worked with the Metropolitan Transportation Authority and Port Authority on major projects including Gateway, the Bus Terminal, Penn Station, and congestion pricing. He fostered dramatic expansion of protected bikeways and bus priority treatments like the 14th Street Busway. He managed development of on-street and off-street electric vehicle charging initiatives and the expansion of the CitiBike shared-bike system to become the largest in the western hemisphere, with 22,000 bikes, which will grow to 40,000 by 2023. He guided development of e-scooter, dockless bike share, and car sharing programs. Replogle testified before and engaged with Congress, federal agencies, Albany, and the NYC Council about various topics including automated vehicle policy, intelligent transportation systems, federal transportation reauthorization bills, COVID recovery legislation, and climate mitigation policy. Mr. Replogle is also co-founder and past board chair of the Partnership on Sustainable Low Carbon Transport (SLoCaT) Foundation, which links multilateral development banks (MBDs), UN agencies, and NGOs. With SLoCaT, he helped foster and monitor implementation of a $175 billion 2012 commitment for more sustainable transport from the 8 largest MDBs and to mainstream sustainable transport in global climate and sustainable development policy which shifted investments and policy. Additionally, Mr. Replogle founded the Institute for Transportation and Development Policy and served as its President for more than 20 years, and as Managing Director for Policy. In those roles, he oversaw growth of that non-profit corporation to a staff of 80 and a budget of $10 million to advance better urban public transport, walking, cycling, and planning world-wide. He remains an ITDP Board Member *Emeritus*. As Transportation Director for the Environmental Defense Fund, Mr. Replogle shaped transportation laws and advised governments on city planning, transport management and finance, and environmental analysis, including extensive work in metropolitan New York. He also held a prior government position in Montgomery County, Maryland, where he was responsible for comprehensive planning, travel forecasting, and growth management. He holds undergraduate civil engineering and sociology degrees and an MSE in civil and urban engineering from the University of Pennsylvania. Mr. Replogle has lectured widely at leading universities and conferences. In 2011, Bloomberg Business Week cited him as one of the world's leading global experts on transportation.

Michael ("Mike") Roeth has worked in the commercial vehicle industry for over 35 years. He is the Executive Director of the North American Council for Freight Efficiency and the trucking lead for RMI. Roeth's specialty is brokering green truck collaborative technologies into the real world at scale. Roeth was awarded the prestigious 2020 L. Ray Buckendale Lecturer and manuscript author. He has a Bachelor of Science in Engineering from the Ohio State University and a Master's in Organizational Leadership from the Indiana Institute of Technology. Roeth served on the second National Academies of Sciences, Engineering, and Medicine Committee on Reducing Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, is a Department of Energy Merit Reviewer and past Chairman of the Board for the Truck Manufacturers Association. He understands the customers, operations and intricacies of the commercial vehicle industry having held various positions in product development, engineering, reliability and quality, sales, materials and plant management with Navistar and Behr/Cummins.

Constantine ("Costa") Samaras is an associate professor in the Department of Civil and Environmental Engineering and Affiliated Faculty in the Energy Science, Technology and Policy Program at Carnegie Mellon University. His research spans energy, climate change, automation, and defense analysis. Dr. Samaras analyzes how energy technology and infrastructure system designs affect energy use and national security, resilience to climate

change impacts, economic and equity outcomes, and life cycle environmental emissions and other externalities. He directs the Center for Engineering and Resilience for Climate Adaptation and is Director of the Power Sector Carbon Index. He is a fellow in Carnegie Mellon's Scott Institute for Energy Innovation and by courtesy, a faculty member in both the Department of Engineering and Public Policy and CMU's H. John Heinz III College of Information Systems and Public Policy. Dr. Samaras is also an Adjunct Senior Researcher at the RAND Corporation and a Non-Resident Fellow of the Payne Institute for Public Policy at the Colorado School of Mines. He served on three National Academies Committees evaluating advanced energy technologies and earth systems, served as the Chair of the ASCE Committee on Adaptation to a Changing Climate, and serves on the Energy Committee of the Transportation Research Board. He has published numerous studies examining electric and automated vehicles, renewable electricity, transitions in the energy sector, and climate resilience, was a contributor to the 4th National Climate Assessment, and was one of the Lead Author contributors to the Global Energy Assessment. He is currently leading an interdisciplinary project on the energy and sustainability implications of automated air, sidewalk, and road vehicle package delivery. Dr. Samaras received a joint Ph.D. in Civil and Environmental Engineering and Engineering and Public Policy and from Carnegie Mellon and an M.P.A. in Public Policy from the Wagner Graduate School of Public Service at New York University.

Dr. Jonathan M. Samet, a pulmonary physician and epidemiologist, is Dean of the Colorado School of Public Health and Professor in the departments of Epidemiology and Environmental & Occupational Health. His research has focused on the health risks of inhaled pollutants and he has also investigated the occurrence and causes of cancer and respiratory diseases, emphasizing the risks of active and passive smoking. He has served on and chaired numerous committees of the National Academies of Science, Engineering and Medicine and he also chaired the Clean Air Scientific Advisory Committee (CASAC) of the U.S. EPA and the FDA's Tobacco Products Scientific Advisory Committee (TPSAC). Dr. Samet has served as editor and author for Reports of the Surgeon General on Smoking and Health since 1984, receiving the Surgeon General's Medallion in 1990 and 2006 for these contributions. He was the Senior Scientific Editor for the 50th Anniversary 2014 report. Dr. Samet received the 2004 Prince Mahidol Award for Global Health awarded by the King of Thailand, the Edward Livingston Trudeau Medal from the American Thoracic Society/American Lung Association, the Luther L. Terry Award for Distinguished Career from the American Cancer Society, and the Fries Prize for Health. He was elected to the National Academy of Medicine (Institute of Medicine) of the National Academy of Sciences in 1997 and received the Academy's David M. Rall Medal for his contributions in 2015.

Shari Schaftlein has 35 years of public service experience, spanning tribal, state, and federal governments and nonprofit. She has held leadership positions in the FHWA Office of Planning, Environment, and Realty for 17 years. Currently, as Director of the Office of Human Environment, she supervises three teams and is responsible for: financial oversight of the Office research program; advancing multimodal connectivity by addressing bicycle and pedestrian networks, mobility innovation, environmental justice and equity, community impacts, and economic development; accelerating project delivery through application of context sensitive design principals; implementing the Transportation Alternatives Program; and, administering procedures and standards for modifying the National Highway System and the Strategic Highway Network. Prior to FHWA, she served Water Quality Program Manager, Streamlining Initiatives Manager, and Deputy Director at the Washington State Department of Transportation's Environmental Office. She has also held environmental management positions with the West Michigan Environmental Action Council in Grand Rapids Michigan and with the Quileute Tribe in La Push, Washington. Ms. Schaftlein received her Master of Science in Environmental Science from Indiana University in 1984.

Dr. Annalisa Schilla is the Chief of the Community Action Branch at the California Air Resources Board. Her team oversees research on sustainable transportation and communities, supports local government climate change mitigation efforts, and recently launched a pilot program to invest in community-driven clean mobility. Dr. Schilla is currently a member of the Transportation Research Board's Air Quality and Greenhouse Gas Mitigation Committee. Dr. Schilla received her Ph.D. from the University of Colorado, Boulder in climate change science where she was also a National Science Foundation fellow focused on climate change mitigation.

Joseph Sherlock is a Senior Behavioral Researcher at Duke University's Center for Advanced Hindsight and also Adjunct Lecturer at Duke University's Sanford School of Public Policy. Mr. Sherlock is on secondment (temporary assignment) in the United States from the central government of the United Kingdom, where he holds the position of Principle Behavioral Insights Specialist with HM Revenue and Customs. Previously, Mr. Sherlock worked as part of the Behavioral Insights Team in Public Health and a Branding Consultant for Clear M&C Saatchi. He is also the Co-Founder of a behavioral and well-being science consultancy. Mr. Sherlock has a First Class Psychology degree from the University of Bath and holds an MSc in Social Policy from The London School of Economics.

Dr. Reuven Sussman is the Director of the Behavior and Human Dimensions Program at the American Council for an Energy-Efficient Economy. Dr. Sussman conducts research on energy efficiency behavior change and co-chairs the annual conference on Behavior, Energy and Climate Change (BECC). He has authored numerous academic papers and book chapters on the psychology of climate change, behavioral interventions to encourage energy efficiency, and the psychological determinants of pro-environmental behavior. Reuven is an advisor for organizations, including the G20, which implement energy efficiency behavior change programs, and an expert reviewer for academic journals and large-scale grant opportunities. He is the winner of the 2019 Early Career Award from the Environmental, Population and Conservation Psychology division of the American Psychological Association, and currently sits on the editorial boards of the Journal of Environmental Psychology and the Journal of Social Psychology. He is also an Adjunct Professor at the University of Victoria in Canada, where he earlier earned a doctor of science in social and environmental psychology.

Shin-pei Tsay's experience converges at the intersection of design, policy, and governance to transform the built environment with a focus on sustainable and inclusive transportation. She is currently Global Head of Cities and Transportation Policy at Uber where she leads a team focused on creating a sustainable, inclusive, and multi-modal urban future. Prior to joining Uber, she founded Make Public, a social impact analysis firm that specializes in the public realm and was executive director of Gehl Institute, a non-profit that advocated for public life and public spaces. Shin-pei has also served as the deputy executive director of TransitCenter, a national foundation focused on improving urban transportation and director of the Cities and Transportation Program under the Energy and Climate Program at the Carnegie Endowment for International Peace. Shin-pei served on the NYC Public Design Commission, taught urban design at Columbia University and Parsons School of Design, and is currently a director for the Boards of ioby and SPUR.

Dr. Jacob ("Jake") Ward has devoted over ten years of public service to the U.S. Department of Energy's (DOE) Vehicle Technologies Office, where he currently serves as the Technology Manager for Analysis and the Acting Director for DOE's sustainable transportation partnership. His portfolio includes vehicle technology and market data, modeling and simulation, transportation economics and consumer choice, and lifecycle emissions analysis. He holds a Ph.D. in Engineering and Public Policy and Mechanical Engineering from Carnegie Mellon University, where his research focused on the energy and environmental impacts of shared, automated, and electrified mobility systems. Dr. Ward also holds a Master of Public Policy from Georgetown University, along with Bachelor's degrees

in Mechanical Engineering, Latin American Studies, and the Plan II Honors program from the University of Texas at Austin, whose Longhorns he still avidly supports.

Dr. Joe Zietsman is the Assistant Agency Director and Strategic Advisor at the Texas A&M Transportation Institute. In this role he oversees TTI's Strategic Planning efforts. He is also the director of the Center for Advancing Research in Transportation Emissions, Energy and Health (CARTEEH), which is a US Department of Transportation Center focused on Health and Transportation. He holds a PhD in Civil Engineering from Texas A&M University and he is a member of the Graduate Faculty of Texas A&M University. His research interests are in the intersection of public health and transportation, sustainable transportation, and air quality.

PLANNING COMMITEE BIOS

Chair – Daniel Greenbaum is President of **Health Effects Institute** (HEI). He leads HEI's efforts to provide public and private decision makers — in the U.S., Asia, Europe, and Latin America — with high quality, impartial, relevant, and credible science about the health effects of air pollution in order to inform air quality decisions in the developed and developing world. In this role, he works with HEI's sponsors in government and industry, its Scientific Committees and staff, and other environmental stakeholders to develop and implement the HEI Strategic Plan for Understanding the Health Effects of Air Pollution, which every five years sets HEI's course. Mr. Greenbaum has been a member of the National Academies Board on Environmental Studies and Toxicology and Vice Chair of the Committee for Air Quality Management in the United States. He most recently served on the National Academies Committee on Grand Challenges for Environmental Engineering. Mr. Greenbaum has four decades of governmental and non-governmental experience in environmental health. Just before coming to HEI, he served as Commissioner of the Massachusetts Department of Environmental Protection from 1988 to 1994, where he was responsible for the Commonwealth's response to the Clean Air Act, as well as its efforts on pollution prevention, water pollution, and solid and hazardous waste. Mr. Greenbaum received the Thomas W. Zosel Outstanding Individual Achievement Award from U.S. EPA for his contributions to advancing clean air, and the Haagen Smit Award from the California Air Resources Board for his and HEI's contributions to air pollution science and policy. Mr. Greenbaum currently serves on the committee of the National Academies' Environmental Health Matters Initiative. Mr. Greenbaum holds Bachelor's and Master's degrees in City Planning, with a concentration on transportation and environment, from the Massachusetts Institute of Technology.

William L. Eisele is at the **Texas A&M Transportation Institute**, where he is a Senior Research Engineer and Division Head leading Texas A&M Transportation Institute's (TTI's) Mobility Division. With over 25 years of experience, he is a recognized expert in the areas of freight mobility, urban freight transportation, mobility analysis/congestion monitoring, performance measurement, and access management. A few selected activities include 1) leading an on-going freight planning support project for Texas DOT with tasks in the areas of urban freight deliveries, freight data integration, visualization of truck bottlenecks and more; 2) led an NCHRP-sponsored effort to develop tools to facilitate implementation of effective urban freight transportation strategies (NCHRP Report 897); 3) co-author of TTI's *Urban Mobility Report*, which provides mobility statistics and trends for metropolitan areas throughout the United States, and he has appeared on numerous network news shows and newspapers and broadcast media in major cities covering the report; 4) thought leader and implementer of freight fluidity activities (freight performance monitoring) across transportation modes and supply chains for a number of sponsors; and 5) principal investigator on an effort to evaluate and update freight performance measures and create a visualization tool for FHWA's Office of Operations, Freight Management and Operations to identify national truck bottleneck locations. Dr. Eisele is a long-time active TRB volunteer, currently serving as Chair of the TRB Urban Freight Transportation Committee. He recently received the Patriotic Employer Award from the Office of the U.S. Secretary of Defense, and he is an Eno Transportation Foundation Fellow. Dr. Eisele received his B.S. and M.S. degrees in civil engineering from Michigan State University, and his Ph.D. in civil engineering from Texas A&M University.

Beth Karlin is founder and CEO of **See Change Institute**, which brings together leading academics and practitioners to work on program strategy, implementation, research, and evaluation of behavioral programs for social and environmental change. She also holds academic appointments as a Senior Fellow at the USC Norman Lear Center and as Founding Director of the Transformational Media Lab at UC Irvine and currently serves as the

US Expert on the International Energy Agency's DSM Task 24 on Behavior Change and Past President of the American Psychological Association Division 34 (Environmental Psychology). Before receiving her Ph.D. in Social Ecology from the University of California, Dr. Karlin spent nearly a decade working in K-12 education, holding positions as a teacher, counselor, and school administrator. She believes that the role of a researcher is not only to better understand the world but also to improve it and hopes that her work is able to serve both purposes. Dr. Karlin currently serves on the National Academies' Environmental Health Matters Initiative committee.

Ysela Llort is Managing Principal for **Renaissance Planning**. She has a diverse background as a planner and brings over 30 years of leadership experience working with departments of transportation (DOTs) and transit agencies. She oversaw Miami-Dade's transportation transit system as the county's Transit Director from 2011 to 2015 and is credited with establishing the metro's Orange Line to Miami International Airport, strengthening Miami-Dade Transit's partnership with the federal government and restoring commitment to transit. She also served with the Florida and Virginia DOTs, establishing leadership and direction in the development of multimodal plans and programs as well as planning and operations programs. Llort has been recognized nationally by the National Conference of Minority Transportation Officials (COMTO) as well as by Cien Latinos/Hispano's de Miami-Dade for her transportation work in the state of Florida. She is also an active member of TRB of the National Academies of Sciences, Engineering, and Medicine. She received her B.S. in Economics and Anthropology from Duke University and a Master of Planning degree from Clemson University.

Gary Minsavage is the Senior Environmental Health Advisor for **ExxonMobil** Corporation, where he provides corporate leadership and strategic direction regarding environmental health matters. Dr. Minsavage is involved in identifying emerging challenges and opportunities, leading collaborative networks and research projects, and contributing to the advancement of risk assessment methods development. Dr. Minsavage is a Diplomate of the American Board of Toxicology, an active member of the US Society of Toxicology where he serves on the Risk Assessment Specialty Section Executive Committee, and also serves on the Board of the Health and Environmental Sciences Institute. He held a number of leadership roles at ExxonMobil including: Division Manager for the Global Product Stewardship Services Division at EMBSI, responsible for supporting product stewardship issues and opportunities, as well as safety data sheet authoring for all of ExxonMobil; Section Head for the Epidemiology, Health Surveillance, and Quality Assurance Section at EMBSI, responsible for coordinating epidemiology and QA programs for ExxonMobil global business units and external collaborations; and Section Head for the Toxicology Section at EMBSI, where he led toxicology research programs and initiatives. From 2008-2011, Dr. Minsavage was on assignment in Brussels, Belgium as the Science Executive for Health Programs at the European refining industry's technical association for health, safety, and the environment (CONCAWE). In this role, he was the EU REACH Project Manager responsible to deliver all petroleum product risk assessments for the 2010 registration period and was responsible to coordinate research in various areas including community health impact of air pollution and epidemiologic assessments of industry workers. Currently, Dr. Minsavage serves as a Liaison for the National Academies' Environmental Health Matters Initiative. Dr. Minsavage received his PhD in toxicology from the University of Rochester and masters of business administration from Rutgers University. He completed postdoctoral training as a U.S. National Research Council Fellow at the US Army Medical Research Institute of Chemical Defense before joining ExxonMobil Biomedical Sciences, Inc. (EMBSI).

Rachael Nealer is the Transportation Chief of Staff for the Office of Energy Efficiency and Renewable Energy at the **U.S. Department of Energy**. Her current portfolio spans research across the Bioenergy Technologies Office, Fuel Cell Technologies Office, and Vehicle Technologies Office with focus on transportation systems modeling in terms of energy and emissions as well as producing publicly available transportation data and information as a foundation for modeling and analysis done at DOE, the national labs, and beyond. Previously, Dr. Nealer worked at the Union of Concerned Scientists (UCS) researching the environmental impacts of electric vehicles compared to gasoline vehicles over their life. Prior to UCS she worked at the Environmental Protection Agency in the Renewable Fuels Standard office and she received her joint Ph.D. in Civil and Environmental Engineering and

Engineering and Public Policy from Carnegie Mellon University where she specialized in lifecycle environmental impacts of freight transportation.

Philip L. Winters is Director, Transportation Demand Management (TDM) Program at the Center for Urban Transportation Research (CUTR) at the **University of South Florida** (USF). He has nearly 40 years in influencing the intensity, timing and spatial distribution of vehicle demand for the purpose of reducing the impact of traffic, managing parking needs, reducing greenhouse gasses, and enhancing mobility options. His team of six full-time researchers has an extensive list of projects from developing tools for influencing travel behavior to predicting impacts of TDM to providing guidance on incorporating TDM into the land development process to creating patented software to track travel behavior on mobile devices. To facilitate the transfer of this knowledge, he established Commuter Choice Certificate, the country's most comprehensive and longest running TDM-related training program. In partnership with USF College of Health, he also introduced Social Marketing in Transportation Certificate to help transportation professionals across the country create local programs designed to affect travel behavior. He created the leading industry listserv in 1998 that now has about 2,000 active members. Mr. Winters is a co-inventor on 16 patents. He is an emeritus member of the Committee on TDM of the Transportation Research Board. He also received the prestigious Association for Commuter Transportation's Bob Owens TDM Champion Award in 2007. Mr. Winters received a B.S. in civil engineering from Virginia Tech.